



(A5) Brakes Sample Questions and Answers

Answers to these questions are found beginning on page 4 of this document

1. Two technicians are discussing a problem where the brake pedal travels too far before the vehicle starts to slow. Technician A says that the brake pedal linkage may be out of adjustment. Technician B says that one circuit from the master cylinder may be leaking or defective. Which technician is correct?
 - a. Technician A only
 - b. Technician B only
 - c. Both Technicians A and B
 - d. Neither Technician A nor B

2. Most vehicle manufacturers specify brake fluid that meets what specification?
 - a. DOT 3
 - b. DOT 4
 - c. DOT 5
 - d. Either a or b

3. Two technicians are discussing brake lines. Technician A says that a double lap flare end can be used when replacing a line that came from the factory with an ISO flare. Technician B says that a replacement line with an ISO flare can be used to replace a line that came from the factory with a double lap flare end. Which technician is correct?
 - a. Technician A only
 - b. Technician B only
 - c. Both Technicians A and B
 - d. Neither Technician A nor B

4. The rubber used in most brake system components will swell if exposed to _____.
 - a. Engine oil or ATF
 - b. Moisture in the air
 - c. DOT 5 brake fluid
 - d. Water

5. A vehicle tends to lock up the front wheels when being driven on slippery road surfaces. Technician A says that the metering valve may be defective. Technician B says the proportioning valve may be stuck open. Which technician is correct?
- Technician A only
 - Technician B only
 - Both Technicians A and B
 - Neither Technician A nor B
6. The front of the vehicle dips downward in the front during light braking. Which of the following is the most likely cause?
- An internally leaking master cylinder
 - A defective metering valve
 - A stuck open proportioning valve
 - Air in the lines
7. The right front wheel brake line on a front-wheel-drive vehicle is cut by road debris. Which other wheel brake may be affected?
- The left front
 - All of the brakes, except the parking brake, will be affected
 - The right rear
 - The left rear
8. Most brake experts and vehicle manufacturers recommend replacing brake lining when the lining thickness is worn to _____.
- 0.030 in. (0.8 mm)
 - 0.040 in. (1.0 mm)
 - 0.050 in. (1.3 mm)
 - 0.060 in. (1.5 mm)
9. Technician A says to use masking tape temporarily over the lining material to help prevent getting grease on the lining. Technician B says that grease on the brake lining can cause the brakes to grab. Which technician is correct?
- Technician A only
 - Technician B only
 - Both Technicians A and B
 - Neither Technician A nor B
10. A star wheel adjuster is installed on the wrong side of the vehicle. Technician A says that the adjuster will cause the brake to lock up if installed on the wrong side. Technician B says the adjuster would cause the clearance to increase rather than decrease when activated. Which technician is correct?
- Technician A only
 - Technician B only
 - Both Technicians A and B
 - Neither Technician A nor B

11. After performing a brake job on a rear-wheel-drive vehicle equipped with front disc and rear drum brakes, the rear brakes tend to grab and the rear tires squeal at times during normal braking. What is the least likely cause?
- Oil or grease on the rear linings
 - Stuck front disc brake calipers
 - A defective proportioning valve
 - A stuck open metering valve
12. New wheel cylinders are being installed. Which operation is not required?
- The wheel cylinder should be bled of any trapped air
 - The retainer fastener should be torqued to factory specifications
 - The brake line should be attached
 - Compressing the pistons before installing the wheel cylinder on the backing plate
13. The letters “DE” on the edge of a disc brake pad indicate _____.
- Wear resistance codes
 - Relative noise level codes
 - Coefficient of friction codes
 - Thickness codes
14. A disc brake rotor is being installed on a lathe for machining. During the setup a scratch test is performed. The scratch extended all the way around the rotor. Technician A says that the rotor should be loosened, rotated 180°, and retightened. Technician B says that the rotor is not warped. Which technician is correct?
- Technician A only
 - Technician B only
 - Both Technicians A and B
 - Neither Technician A nor B
15. Two technicians are discussing rotor finish. Technician A says to use a sandpaper block on both sides of the rotor while being rotated on the lathe for one minute to achieve the proper surface finish after the rotor has been machined. Technician B says that the rotor should have a non-directional finish. Which technician is correct?
- Technician A only
 - Technician B only
 - Both Technicians A and B
 - Neither Technician A nor B

Answers to Sample Questions

- The correct answer is c.** Both technicians are correct. Technician A is correct because if there is excessive clearance in the brake pedal linkage, the brake pedal must travel further to push on the master cylinder piston resulting in a lower than normal brake pedal. Technician B is correct because if the hydraulic line or component is leaking from one circuit of the master cylinder, the brake pedal has to be depressed further to apply the remaining pressure-building piston and seal, which operates the other hydraulic circuit. Answers a, b, and d are not correct because both technicians are correct.
- The correct answer is d.** Answer d is correct because either DOT 3 or DOT 4 depending on the make and model of vehicle. Answer a is not correct because, while DOT 3 brake fluid recommended by most domestic and Asian vehicle manufacturers, the best answer is d because most European vehicles specify the use of DOT4 brake fluid. Answer b is not correct even though DOT 4 is the recommend fluid to use in many European vehicles, it is not the recommended for use in many domestic or Asian vehicles. Answer c is not correct because DOT 5 is silicone based and does not mix with polyglycol-based DOT 3 or DOT 4 brake fluid and is not recommended.
- The correct answer is d.** Neither technician is correct. Technician A is not correct because a double lap flare end will not fit properly in fittings designed for ISO flare, sometimes referred to as a ball or bubble flare. Technician B is not correct because a line equipped with and ISO flare cannot be used to replace a line with a double lap flare because the angles and shape of the fittings would not allow proper sealing and should never be interchanged. Answers a, b, and c are not correct because neither technician is correct.
- The correct answer is a.** Engine oil or ATF will cause rubber seals and O-rings to swell. Answer b is not correct because moisture, while harmful to brake fluid, will not cause rubber brake components to swell in size. Answer c is not correct because while DOT 5 brake fluid is not miscible (able to be mixed) with DOT 3, it would not cause the rubber seals to swell even though it could cause other brake system faults. Answer d is not correct because water will not cause rubber brake components to swell even though water in the brake system can cause the brake fluid to become contaminated and reduce its boiling point temperature.
- The correct answer is a.** Technician A is correct because the metering valve closes off the passage(s) to the front brakes until 70 to 300 psi is applied to the hydraulic system to allow the rear brake to be applied before the brake fluid pressure is applied to the front disc brakes. If the metering valve were to fail in the open position, hydraulic brake fluid pressure would be applied to the front brakes as soon as the brake pedal is depressed, which could cause the vehicle to nose dive or the front wheels to lock up if on a slippery surface. Technician B is not correct because the proportioning valve only controls (limits) the flow of brake fluid to the rear brakes during hard braking and would not cause the problem of front wheel lockup on slippery surfaces during light braking. Answers c and d are not correct because only Technician A is correct.
- The correct answer is b.** A faulty (stuck open) metering valve will cause hydraulic pressure to be applied to the front disc brakes before the brake fluid pressure has overcome the return spring pressure on the rear brakes, causing the vehicle to dip down at the front during light braking. Answer a is not correct because a leaking master cylinder would not cause the front brakes to be applied before the rear brakes. Answer c is not correct because the proportioning valve limits the maximum brake fluid pressure that is sent to the rear wheel brakes during hard braking and would not cause the front to dip during light brake applications. Answer d is not correct because even though air in the lines can cause a problem, it is unlikely to cause the front brakes to apply first during a light braking causing the front of the vehicle to dip.

7. **The correct answer is d.** Front-wheel-drive vehicles use a diagonal split braking system, which ties the right front with the left rear on a separate circuit from the left front/right rear brakes. Answers a, b, and c are not correct because the right front and the left rear are operated off the same circuit or portion of the master cylinder.
8. **The correct answer is a.** Most vehicle manufacturers specify that brake lining be replaced when the lining thickness has been worn to thirty thousandths of an inch (0.030 in.) (3/32 in.) or less. Answers b, c, and d are not correct because even though some vehicle manufacturers recommend that the brakes be replaced when the lining thickness is less than the amount in the answer, most manufacturers state 0.030 in. as the minimum allowable lining thickness.
9. **The correct answer is c.** Both technicians are correct. Technician A is correct because using masking tape over the friction surface of the brake linings is an excellent method to use to prevent the possibility of getting grease on the linings. Technician B is correct because grease or brake lining can cause the brake to grab. Answers a, b, and d are not correct because both technicians are correct.
10. **The correct answer is b.** Technician B is correct because star-wheel adjusters use right-hand and left-hand threads and are labeled left and right. If they are installed on the wrong side of the vehicle, the adjusting lever will rotate the threads inward, rather than outward, thereby increasing the clearance between the brake shoe and the drum. Technician A is not correct because the adjuster will be rotated the opposite direction and the over-ride spring will prevent any harm. Answers c and d are not correct because only Technician B is right.
11. **The correct answer is d.** A stuck open metering valve would not be a likely cause of rear wheel lockup because the metering valve simply delays the operation of the front brakes on a front disc, rear drum brake system.. Answers a, b, and c are not correct because all three items can cause brakes to grab and are therefore not the least likely to create the condition.
12. **The correct answer is d.** The pistons in a wheel cylinder do not need to be compressed when installing new wheel cylinders. The pistons are free to move and a light spring between the two pistons is easily compressed by the brake shoes as they are installed onto the backing plate. Answers a, b, and c are not correct because these operations must be performed and are, therefore, not one of the operations that need not be performed.
13. **The correct answer is c.** The brake lining edge codes indicate the coefficient of friction using two letters. The first letter represents the coefficient of friction when the lining is cold and the second when the lining is hot. Answers a, b, and d are not correct because the letters refer to the coefficient of friction and not other information.
14. **The correct answer is b.** Technician B is correct because the scratch test indicates that the rotor is not warped, otherwise the scratch would have occurred over only part of the rotor face. Technician A is not correct because the rotor should be rotated 180° if the scratch is made on one-half of the rotor face to check if the rotor has been installed correctly on the brake lathe. Answers c and d are not correct because Technician B only is correct.
15. **The correct answer is c.** Both technicians are correct. Technician A is correct because using sandpaper (150 grit aluminum oxide) for one minute on each side of the rotor will smooth the rotor to an acceptable finish. Technician B is correct because a non-directional surface finish is necessary to prevent the disc brake pads from moving during a brake application, which helps prevent brake squeal. Using sandpaper for one minute will not only provide the correct surface finish but will also produce a non-directional surface. Answers a, b, and d are not correct because both technicians are correct.